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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tadahiro Kuroda

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EXAMINER

SEMENENKO, YURIY

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,769	Applicant(s) KURODA ET AL.	
	Examiner YURIY SEMENENKO	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Amendment filed on 05/29/2009 has been entered.
Claims 2 and 5-6 have been cancelled. Claims 8-10 are newly added.
Claims 1, 3, 4 and 8-10 are now pending in the application.

Claims

2. Claim 1 amendments, filed on 05/29/2009 are considered and acknowledged.
The claims amendments are approved.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3.1. Claims 1, 4, 8 and 10 are rejected under 35U.S.C. 103(a) as being unpatentable over Umeno et al (US 6,000,128), hereinafter Umeno in view of Legal Precedent.

Note: the examiner notes that limitations “to form coils by wiring on a substrate”, “substrates being laminated” are within of the common knowledge of person of ordinary skill in the art. Further, a limitations “is formed by wiring” and “substrates being laminated” are a process limitations in the product claim. Such process limitations define the claimed invention over the prior art only to the degree that they define the product itself. A process limitation cannot serve to patentably distinguish the product over the prior art, in the case that the product is the same as, or obvious over, the prior art. See Product-by-Process in MPEP 2113 and 2173.05(p) and In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 1: Umeno teaches in figs. 6-9 an electronic circuit comprising: a first substrate (substrate A'; fig. 9C) including a first coil 4 that is formed by wiring on the first a substrate 1, (col. 7: 28-38), and is connected to a transmitter circuit, fig. 6 and (col. 5:38-40 and col. 6:30-32); a second substrate (substrate A; fig. 9A) including a second coil 4 that is formed by wiring on the second a substrate 1 (col. 7: 28-38) at a position corresponding to said first coil figs. 7-8, is inductively coupled to said first coil, and is connected to a first receiver circuit (co.7: 28-38); and a third substrate 1 (substrate B; fig. 9B) including a third coil (coil 4; fig. 9B) that is formed by wiring on the third substrate 1 at a position corresponding to said first and second coils 4, is inductively coupled to said first and second coils, and is connected to a second receiver circuit (col. 7: 28-38); said substrates being laminated (Umeno teaches substrate 1a to 1e are integrated into a single body, col. 5:28-34), wherein said transmitter circuit fig. 6 changes a potential of said first coil in response to a change of a transmission digital signal , changes a potential of said first coil from said second potential to said first

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potential in response to a change of said transmission digital signal, and changes a potential of said first coil from said second potential to said first potential; and said first and second receiver circuits receive a digital signal transmitted by said transmitter circuit (col. 5:30-60).

Although Umeno doesn't explicitly teach said substrates being laminated in order from said first substrate to said third substrate, at time the invention was made, it was well known, that design of the multilayer circuit board permits variations and the substrates could be rearranged in any order. Further, it has been held that rearrangement of parts is an obvious matter of design choice, *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice).

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made, for Umeno to include in his invention said substrates being laminated in order from said first substrate to said third substrate, in order to provide better magnetic coupling and since it has been held in *re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice) that rearrangement of parts is an obvious matter of design choice.

Umeno also doesn't explicitly teach said transmitter circuit changes a potential of one end of said first coil from a first potential to a second potential in response to a change of a transmission digital signal from zero to one, changes a potential of the other end of said first coil from said first potential to said second potential in a predetermined delay, changes a potential of said one end of said first coil from said second potential to said first potential in response to a change of said transmission digital signal from one to zero, and changes a potential of said other end of said first coil from said second potential to said first potential in a predetermined delay. However the examiner assumed that the functionality follow from the already recited structure (MPEP 2114). And further, a claim containing a "recitation with respect to the manner in which a

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claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). In this case, the prior art (Umeno) sets forth all of the structural limitations of the claims.

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for Umeno to include in his invention said transmitter circuit changes a potential of one end of said first coil from a first potential to a second potential in response to a change of a transmission digital signal from zero to one, changes a potential of the other end of said first coil from said first potential to said second potential in a predetermined delay, changes a potential of said one end of said first coil from said second potential to said first potential in response to a change of said transmission digital signal from one to zero, and changes a potential of said other end of said first coil from said second potential to said first potential in a predetermined delay, in order to provide signals transmission between substrates.

Regarding claim 8: Umeno teaches in figs. 6-9 an electronic circuit comprising: a first substrate (substrate A'; fig. 9C) including a first coil 4 that is formed by wiring on the first substrate 1, (col. 7: 28-38), and is connected to a transmitter circuit fig. 6 and (col. 5:38-40 and col. 6:30-32); a second substrate (substrate A; fig. 9A) including a second coil 4 that is formed by wiring on the second substrate 1 (col. 7: 28-38) at a position corresponding to said first coil, figs. 7-8, is inductively coupled to said first coil, and is connected to a first receiver circuit fig. 6 and (col. 5:38-40 and col. 6:30-32); and a third substrate 1, (substrate B; fig. 9B) including a third coil (coil 4; fig. 9B) that is formed by wiring on the third substrate 1, (col. 7: 28-38) at a position corresponding to said first and second coils, figs. 7-8, is inductively coupled to said first and second coils, and is connected to a second receiver circuit (col. 7: 28-38), said substrates being laminated (Umeno teaches substrate 1a to 1e are integrated into a single body, col. 5:28-34), wherein and said first and second receiver circuits receive a digital signal transmitted by said transmitter circuit, fig. 6, (col. 5:30-60).

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Although Umeno doesn't explicitly teach said substrates being laminated in order from said first substrate to said third substrate, at time the invention was made, it was well known, that design of the multilayer circuit board permits variations and the substrates could be rearranged in any order. Further, it has been held that rearrangement of parts is an obvious matter of design choice, *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice).

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made, for Umeno to include in his invention said substrates being laminated in order from said first substrate to said third substrate, in order to provide better magnetic coupling and since it has been held in *re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice) that rearrangement of parts is an obvious matter of design choice.

Umeno also doesn't explicitly teach said transmitter circuit connects one end of said first coil to two potentials selectively in response to a transmission digital signal and maintains the other end of said first coil in an intermediate potential between said two potentials. However the examiner assumed that the functionality follow from the already recited structure (MPEP 2114). And further, a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). In this case, the prior art (Umeno) sets forth all of the structural limitations of the claims.

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for Umeno to include in his invention said transmitter circuit connects one end of said first coil to two potentials selectively in response to a transmission digital signal and maintains the other end of said first coil in an

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intermediate potential between said two potentials, in order to provide signals transmission between substrates.

As to claims 4 and 10: Umeno as modified, discloses the electronic circuit having all of the claimed features as discussed above with respect to claim 1(8), but Umeno doesn't explicitly teach said first coil is smaller than said second and third coils.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made for Umeno to make said first coil is smaller than said second and third coils in order to provide necessary coefficient of the transformation and because it has generally been recognized that change in shape or change in size configuration, without any criticality, is within the level of skill in the art as particular size claimed by applicant is nothing more than one of numerous size that a person of ordinary skill in the art would have found obvious to provide using routine experimentation based on its suitability for the intended use of the invention, See *In re Dailey*, 149 USPQ 47 (CCPA 1966).

3.2. Claims 3 and 9 are rejected under 35U.S.C. 103(a) as being unpatentable over Umeno as applied to claims 1, 4, 8 and 10 above, and further in view of Weber et al., (US 5701037) hereinafter Weber.

Regarding claims 3 and 9: Umeno discloses the electronic circuit having all of the claimed features as discussed above with respect to claim 1(8), wherein said first and second a receiver circuits further include two resistors (shown in fig. 6),

except Umeno doesn't teach said first and second a receiver circuits further include two resistors that respectively connect both ends of said first and second coils to one predetermined voltage source.

Weber teaches in fig. 7 the receiver circuit that connects only one end of the resistors R_1 to a predetermined voltage source. However the prior art structure (discloses resistors R_1 and R_2 connected to a predetermined voltage source) is capable of performing the intended use (connects both ends of said second coil to a

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predetermined voltage source via resistors), then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for Umeno to include in his invention said first and second a receiver circuits further include two resistors that respectively connect both ends of said first and second coils to one predetermined voltage source, as taught by Weber in order to provide voltage variation a receiver circuit.

Response to Arguments

4. Applicant's arguments filed on 05/29/2009 are considered and acknowledged but are moot in view of the new grounds of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuriy Semenenko whose telephone number is (571) 272-6106. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on (571)- 272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. S./

Examiner, Art Unit 2841

/Dean A. Reichard/

Supervisory Patent Examiner, Art
Unit 2841